



PAIN AND QUALITY OF LIFE IN NON-SPECIFIC NECK PAIN PATIENTS

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ABSTRACT

Neck pain is the most common musculoskeletal condition affecting the community and has a debilitating impact on the functional performance of an individual. The purpose of this study was to evaluate the impact of neck pain on quality of life. A cross-sectional study was conducted in 100 subjects in the age group of 18 – 60 years diagnosed with nonspecific neck pain. Pain intensity was measured using visual analogue scale (VAS). The Quality of Life was evaluated by the 36-Item Short Form Health Survey questionnaire (SF-36). Out of 100 patients, 47 were males and 53 females. The mean age of the participants was 30.53 ± 10.84 years. There was a negative correlation between pain and physical component summary and mental component summary score of SF 36. Also, a significant difference in pain, physical component summary (PCS) and mental component summary (MCS) scores between males and females. Females had lower scores than male in quality of life domain. Hence, these components should be included during assessment which will provide a holistic and multimodal approach towards the understanding, planning and enhancement of management of these patients.

KEYWORDS: Nonspecific neck pain, Quality of life, VAS, SF-36.

INTRODUCTION:

The cervical spine is a complex region of the vertebral region providing maximum mobility and least stability. Neck pain is the most common musculoskeletal condition affecting the community. It has a debilitating impact on the functional performance of an individual and thus poses as a burden for both the patient and society¹. Non-specific neck pain is defined as simple neck pain without any specific underlying cause or disease that may cause the pain. The actual course of non-specific neck pain is not clear which varies from weeks of onset to months and thus can limit the performance of daily functions. There are multifactorial factors that lead to non-specific neck pain and mainly are categorized into two - mechanical and postural causes. Mechanical factors include repetitive motion leading to excessive loading of cervical structures. Whereas, postural factors include awkward posture or postural malalignment in daily occupational activities².

According to the World Health Organization, "Quality of Life" is described as an individual's perception of his/her position in life in the context of the culture and value systems in which he lives and in relation to his goals, expectations, standards and concerns³. It is a global construct that encompasses physical, social and psychological functioning, work role functioning, and vitality⁴.

In nonspecific neck pain patients, pain leads to reduced physical function which in turn has an impact on their activities of daily living. This takes a toll on economic burden, as well affecting the leisure, social life, and affecting them psychologically, leading to reduction in their quality of life. As all the components appear to be interlinked with each other, they form important perspectives to be looked upon during assessment and management of patients with nonspecific neck pain. Hence, the purpose of this study is to quantify the potential impact of neck pain and disability on quality of life which will help us provide wider understanding and give a holistic approach towards the patient for the enhancement of treatment to improve the overall functioning of the individual.

MATERIALS AND METHODS:

A cross-sectional study with purposive sampling method was conducted after the approval of institutional research review committee. 100 subjects in the age group of 18 – 60 years diagnosed with nonspecific neck pain were recruited. Subjects with cervical radiculopathy or existing upper limb pathology were excluded from the study. Subjects were explained about the nature of the study in the language best understood by them. A duly signed written informed consent was taken from the subjects who were willing to participate in the study. The demographic information of participants, such as, age, gender and dominance were recorded.

Pain intensity was measured on a 0-10 visual analogue scale (VAS) anchored with the words 'no pain at all' and 'worst pain imaginable'. The participants were asked to mark a point on the scale which described their pain intensity. The Quality of Life was evaluated by the 36-Item Short Form Health Survey questionnaire (SF-36). SF-36 is designed to provide a global measure of health-related quality of life (HRQoL). SF-36 is a valid and reliable measure for clinical and general populations with a reported interclass correlation coefficient (ICC) of 0.8. The components are grouped as physical component summary (PCS) and mental

component summary (MCS). PCS comprises of physical functioning, role limitations due to physical health, fatigue and pain whereas MCS includes role limitations due to emotional problems, emotional well-being, social functioning and general health⁵. SF-36 scores vary from 0 to 100; higher scores represented better health related quality of life (HRQoL).

Statistical analysis:

All statistical analysis was done using SPSS Statistics v20.0. Descriptive statistics was used to calculate mean and standard deviation. Unpaired t test was used to identify differences in QOL scores based on gender. Pearson correlation test was used to find the association between neck pain and quality of life. The level of significance was set at $p < 0.05$.

RESULTS:

The present study included 100 nonspecific neck pain patients in the age group of 18 to 60 years. Out of which 47 were males and 53 were females. The mean age of the participants was 30.53 ± 10.84 years. Mean values of age, pain (VAS score), PCS score and MCS score are shown in Table 1.

Table 1. Mean and Standard Deviation values of variables.

Variables	Mean \pm SD
Age (in years)	30.53 ± 10.84
Pain (VAS Score)	5.4 ± 1.16
Physical component summary (PCS)	68.43 ± 14.74
Physical functioning	79.45 ± 15.74
limitations due to physical health	69.5 ± 33.82
Bodily Pain	68.34 ± 13.84
General Health	56.4 ± 13.48
Mental component summary (MCS)	73.04 ± 13.56
Limitations due to emotional problems	76.69 ± 29.83
Vitality	62.24 ± 11.5
emotional well-being	71.64 ± 11.83
Social functioning	81.71 ± 18.81

There was a negative correlation between pain and physical component summary and mental component summary score of SF 36. (Table 2) As the neck pain increases, the PCS and MCS score decreases. Hence, the quality of life declines.

Table 2. Correlation between pain and QOL (PCS & MCS)

Variable	PCS	MCS
pain	$r = -.351^{**}$	$r = -.375^{**}$
	$p = .000$	$p = .000$

It was observed that there was significant difference in pain, physical component summary (PCS) and mental component summary (MCS) scores between males and females. (Table 3)

Table 3. Comparison of mean scores of pain and QOL (PCS and MCS) between males and females

Variable	Male Mean \pm SD	Female Mean \pm SD	p value
Age	30.96 \pm 8.36	30.15 \pm 12.71	0.71
Pain	5.15 \pm 1.14	5.62 \pm 1.15	0.04*
Physical component summary (PCS)	71.49 \pm 12.34	65.72 \pm 16.22	0.05*
Mental component summary (MCS)	76.32 \pm 11.31	70.13 \pm 14.79	0.02*

DISCUSSION:

Neck pain is a frequent source of disability causing humane suffering and affecting the well-being of individuals. It is one of the most common musculoskeletal disorder which imparts considerable cost for the individual and the society, The present study aimed to find correlation between pain and quality of life in individual with nonspecific neck pain. It showed there is a negative correlation between pain and quality of life which indicates that increase in the intensity of pain, the quality of life reduces.

Quality of Life is based on various factors like personal physical health, mental status, and level of independence in performance of daily activities, social relationships and environment 6. Physical and mental affection in quality of life is observed which hinders the participation of an individual in the activities of daily living. Altered posture and improper ergonomics lead to malalignment in the kinematic and kinetic relationship of the cervical spine which leads to pain and muscle weakness. This in turn reduces the functional performance of an individual which has an impact on social participation of an individual that affects both physical and psychosocial domain.

A recently published study showed that there is a significant correlation between neck pain, neck disability index and upper limb dysfunction in non-specific neck pain patients⁷. It is observed that nonspecific neck pain not only has an impact on the neck region but also affects the upper limb function causing reduction in functional performance. This in turn will affect the quality of life of an individual.

Also, it was reported there was significant difference in quality of life among males and females. Females had lower PCS and MCS scores as compared to males which depicted quality of life was significantly more impaired in females as compared to males. Females have a manifold role than males. These findings are in accordance with the study done by Mclean et al which demonstrated difference in quality of life domain with respect to gender⁸.

CONCLUSIONS:

The study showed that there is a correlation between pain and quality of life in non-specific neck pain patients. Also, significant difference was observed in quality of life scores among males and females. Hence, these components should be included during assessment which will provide a holistic and multimodal approach towards the understanding, planning and enhancement of management of these patients.

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